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MEDIUM-TERM PLANNING AND COORDINATION IN ENERGY

Energy activities of the United Nations system

Report of the Secretary-General

SUMMARY

Many entities within the United Nations system are actively involved in a wide range of projects and programmes in energy, covering energy development and use, energy efficiency, management, analysis and projections, financial resources and investment, institutions and capacity-building, cooperation and coordination of energy activities, and information flows. The mode of action too has varied, involving technical and financial assistance, advisory services, expert group meetings, workshops and seminars, studies, establishment and maintenance of computer tools and database or publications.

Under energy development and use, which appears to have attracted a lot of attention, are projects and programmes in energy development and exploration, assessment and planning, electricity development and use, renewable energy resources, new energy technologies, fuel substitution, development of national and regional energy policies, and integration of energy, environment and development policies. There are also reported activities in identifying energy trends and perspectives, weather and climate implications, environmental impact assessment, and mitigation of adverse environmental effects. A significant

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number of programmes are to be found in education and training, generation of awareness, and capacity-building. Of particular interest is the growing trend towards cooperation among the entities within the United Nations system in energy projects and programmes.

The nature and level of activities are dictated by the mandates of the legislation or governing bodies and the level of financial and other resources made available. This varies widely as is reflected in the number and type of activities by individual entities.

I. INTRODUCTION

1. The Committee on New and Renewable Sources of Energy and on Energy for Development, at its special session in February 1995, requested the Secretary-General to prepare a report on energy activities of the United Nations system. 1/ This report has been prepared in response to that request. It is based on the information compiled in-house, as well as revisions, updates and comments by the respective organizations. It consists of description of activities, observations and conclusions. 2/ A number of organizations have not provided the information requested; consequently, their activities have not been reflected.

II. ACTIVITIES BY ENTITIES OF THE UNITED NATIONS SYSTEM

2. The wide range of activities are varied, reflecting as they do the mandates of the governing or legislative bodies of the entity. Some of the activities are ongoing; others have been reformatted or recast in the light of emerging issues or challenges. A background paper will include a table giving a summary of the activities in energy within the United Nations system.

3. The main activities include energy development and use, energy efficiency, management, analysis and projection, financial resources and investment, institutions and capacity-building, cooperation and coordination, and information flows.

4. Energy development and use is subdivided into energy development and exploration, assessment and planning, electricity development and use, renewable energy sources, new energy technologies, fuel substitution, development of natural and regional policies, and integration of energy, environment and development policies. There are no subdivisions for energy management, financial resources and investment, cooperation and coordination, or information flows. Analysis and projections include energy trends and perspectives, weather and climate implications, environmental impact assessments, and mitigation of adverse environmental effects, while institution and capacity-building comprises education and training, generation of awareness and capacity-building.

A. Energy development and use

5. Most activities are to be found under this main category. Within energy development and exploration, some activities are global in character. Examples include promotion of exploration and development of energy resources in developing countries, provision of support for exploration, development and use of indigenous energy resources, research on women and energy, petroleum refinery; and assessment, exploitation and use of uranium resources.

6. There are also many activities at the regional level; e.g. petroleum supply and distribution in the African region, study of recent projects in oil and gas in the West Asian region, coal, oil, and gas and electric development and

utilization, rural energy, and environment. National level activities involve advisory services, technical assistance, financial assistance, and loans.

7. A limited number of activities are reflected under energy assessment and planning at the global, regional and national levels. These include energy environment planning, energy supply and demand trends, integrated planning approach to energy, comparative assessment of different sources of energy, integrated approach for energy and rural planning, and the impact of restructuring of energy investments in rural areas.

8. Many entities are involved in one form or another in development and use of electricity: demand side management, private sector participation, possibilities for interconnections, power plant assessment and modernization, comparative assessment of energy sources for electricity generation, power system rehabilitation, rural electrification, hydro and thermal power development, and electricity tariffs and pricing. Specific actions have included loans, technical assistance, seminars, workshops, and studies. A major thrust of activities in this category has been a move towards privatization of the electricity subsector.

9. Renewable sources of energy continue to receive attention. The activities involve promoting or furthering development and use of such sources, cooperation in the implementation of projects, examining potential contributions, and viability of specific sources and technologies. An important consideration relates to rural energy development. Many of the activities in renewable energy sources have been at the national and regional levels. The actions include technical and financial assistance, seminars and workshops, studies and publications, research and development, and field projects.

10. To promote or further the application of new energy technologies, a number of entities have undertaken studies or held symposia, while others have provided technical and financial assistance. The range of activities are varied; for example, economic viability of specific technologies, improved exploration or extraction, demonstration projects, monitoring new developments and advances, promoting or facilitating transfer of know-how and technology, development and dissemination of appropriate software and other techniques, application of new technologies, and promotion of the exchange of information on improved designs.

11. With the exception of a couple of organizations, fuel substitution does not seem to be attracting much attention. Even then, one approach is an indirect one: from the perspective of energy environment planning. The other relates to the use of gaseous fuels for motor vehicles.

12. Some organizations are addressing the issue of the development of national and regional energy policies through studies, expert groups, advisory services, and technical assistance. The regional commissions appear to be actively involved. Reported activities comprise development of policies and strategies for the national energy sector, reforms in the energy sector, establishment of regional mechanisms for coordinating energy policies, and design, formulation and application of energy plans and policies, including those for agricultural and rural development. Others refer to guidelines for regulation, legislation for specific energy sources or forms.

13. A related sub-activity is the integration of energy, environment and development policies, in which a variety of actions is reported, including studies, technical assessments, loans, technical assistance, seminars, symposia, and publications. The Economic and Social Commission for Asia and the Pacific (ESCAP) has a regional programme for cooperation energy resiliency and integration of environment into energy policy and planning. There are also programmes on the interface between energy and the environment, and the environmental aspects of sustainable energy development and of formulating integrated energy policies into overall socio-economic development strategies. Other specific activities concern linking energy statistics with environmental statistics, including the development of environmental indicators, energy and environmental linkages in rural areas, power and environment improvement, integration of health and environmental issues into energy and electricity planning, and research and training material on women, energy, environment and development policies.

B. Energy efficiency

14. A number of organizations are involved in such areas as conservation and efficient use of energy, rational use, efficiency and conservation of energy, and maximizing efficiency of energy production, conversion distribution and use. At the regional level, the Energy Efficiency 2000 Project, initiated in the Economic Commission for Europe (ECE) region, has received support from within and outside the United Nations system. Other activities worth noting are rationalizing energy-end use, development and application of energy intensity, energy indicators, efficient wood energy systems, efficient agro-mechanization, power loss reduction, and efficiency of electricity distribution systems.

C. Energy management

15. This is closely associated with energy efficiency. The largest well-known programme is the World Bank - executed Energy Sector Management and Assessment Programme (ESMAP), a joint World Bank-United Nations Development Programme (UNDP) effort, involving many countries in all the regions of the world. The programme involves energy conservation, power loss reduction, and power utility efficiency improvement. Examples of programmes by other entities are improvement of management techniques, development of market-based gas industries in economics in transition, fostering efficient management of energy institutions and enterprises and energy management in rural areas.

D. Analysis and projections

16. Under this category are energy trends and perspectives, weather and climate implications, environmental impact assessments, and mitigation of adverse environmental effects. Energy trends and perspectives comprise energy demand and supply issues, sectoral energy demand trends, development of methodologies, and analytical techniques, including models for energy studies and evaluation. A number of entities are also active in monitoring and analysing global energy

trends, their long-term development prospects and their impact on world economy development efforts, and future energy requirements in specific sectors.

17. A few organizations are concerned with the issue of weather and climate implications of energy production and use. A major player is the Intergovernmental Panel on Climate Change.

18. Some United Nations bodies have programmes in energy-related environmental impact assessment. These include training workshops in energy environment planning, environmental impact of emerging energy trends, promoting increased understanding of the environmental impacts of various policy options and strategies, and environmental cost/benefit analysis. Environmental impact of specific energy sources, e.g. natural gas and climate, and electric power industry and climate change, is also the concern of few entities.

19. Only a few organizations are directly concerned with the mitigation of adverse environmental effects. A smattering of specific activities include energy environment planning, and formulation and implementation of programmes for the mitigation of greenhouse gases. Others refer to promotion of the use of resources that emit less or no greenhouse gases; e.g. natural gas, and renewable sources of energy. Of increasingly global interest are efforts aimed at eliminating lead in gasoline. A specific concern also relates to the control of radionuclide dispersion and environmental protection.

E. Financial resources

20. This category refers to the funding of energy projects, both conventional and renewable sources. It does not address the more fundamental question of the funding of sustainable energy patterns, e.g. through pricing and elimination of subsidies. The major actor in this category is the World Bank with a myriad of current and projected loans and investments in a whole range of energy and related activities, for example, energy sector projects, power development and rehabilitation, energy efficiency, power loss reduction, and hydrocarbon development. The World Bank has spearheaded initiatives towards privatization of energy organization and enterprises. UNDP also funds many projects through its indicative project funding or the co-financing of joint projects with donor countries and other donor organizations. It is also helping create a policy environment for attracting public and private capital and funds (e.g. Energy Account) for pre-feasibility studies and in joint financing of such programmes as FINESSE. The Global Environment Facility (GEF) has in recent years been playing and is expected to increasingly play a significant role in funding energy projects that involve environmentally sound technologies. Currently, GEF funding on energy-related projects is of the order of $291 million or about 34 per cent of the total outlays. Other entities explore and monitor the mobilization of new sources of financing sustainable energy projects, exploring potential sources for funding technical assistance, provision of funds for the safe management of radioactive wastes and assistance in the design and formulation of funding projects.

F. Institution and capacity-building

21. This category comprises education and training, generation of awareness, and capacity-building. A number of activities are reported under education and training in the form of workshops, expert group meetings, seminars, training courses, and study tours. Examples include construction and operation of biogas plants, energy statistics, exploration, development and use, of renewable sources of energy, environment, enhancing the capacity of national institutions, energy conservation, fundamentals of integrated environmental management, safe management of radioactive wastes and fuel cycle operations, planning and management methodologies, and energy efficiency.

22. Some activities relate specifically to awareness raising with regard to environmental issues, energy efficiency and conservation, including demand-side management, training on the various roles of women in the energy sector, potential of renewable sources of energy, energy problems in rural areas, etc.

23. A number of activities concern capacity-building, comprising the gas centre technical cooperative programme, strengthening national and subregional institutions, strengthening energy institutions in least developing countries of a particular region, establishment or strengthening the capacity of national institutions in planning and energy data information processing, strengthening of government capabilities for policy formulation, planning, design implementation and monitoring of projects, building and enhancing capacity for energy, electricity and nuclear power planning and decision-making, and the promotion of an inter-disciplinary approach to energy and rural development.

G. Cooperation and coordination

24. Many organizations provided information under this category. ESCAP is executing the programme on Asian cooperation of energy and the environment, funded by UNDP. UNDP and the World Bank cooperate in ESMAP. The World Bank, UNDP and other entities within and outside the United Nations are jointly funding the FINESSE programme. A major cooperative effort spearheaded by ECE is the Energy Efficiency 2000 Project, in which the regional commissions, other entities of the United Nations, other international and non-governmental organizations are involved. The United Nations Educational, Scientific and Cultural Organization (UNESCO) initiative on the High-Level World Solar Energy Summit Process is receiving support from many other organizations, e.g. ECE, the United Nations Industrial Development Organization (UNIDO) and the International Atomic Energy Agency (IAEA). IAEA is coordinating the joint inter-agency project entitled Databases and Methodologies for Comparative Assessment of Different Energy Sources for Electricity Generation (DECADES) in cooperation with a number of regional commissions, the World Bank, UNIDO, the World Meteorological Organization (WMO) and other international organizations. It is also coordinating the preparation and convening the International Symposium on Electricity, Health and the Environment in cooperation with ESCAP, the World Bank, the United Nations Environment Programme (UNEP), UNIDO, WMO and other international organizations. WMO has over the years been cooperating actively with UNEP in the work of the Intergovernmental Panel on Climate Change.

25. WMO and UNEP have been cooperating in coordinating the work of the Intergovernmental Panel. Meanwhile, the Food and Agriculture Organization of the United Nations (FAO) has been cooperating with the Economic Commission for Latin America and the Caribbean (ECLAC), ESCAP, the World Bank and other international organizations, regional organizations, and development banks in many rural development projects; a Latin American working group on sustainable development has been established in Uruguay. The Department of Economic and Social Information Planning and Analysis of the United Nations Secretariat has continued cooperation and coordination with entities within the United Nations system in such areas as the Statistical Commission Working Group on International Statistical Programmes and Coordination and the Advisory Committee on Coordination Subcommittee on Statistical Activities and in addressing energy issues in the context of the World Economic and Social Survey. The Department for Policy Coordination and Sustainable Development of the United Nations Secretariat is cooperating with other entities of the United Nations system in the preparation of reports for the Committee on New and Renewable Sources of Energy and on Energy for Development and for other intergovernmental bodies, e.g. the Commission on Sustainable Development.

H. Information flows

26. Many organizations are concerned with this activity. Specific activities include the Energy Efficiency Guidebook for Asia and the Pacific, publication of proceedings of a workshop on the use of solar energy, viability of using photovoltaic energy for rural areas, production, consumption (with tables) of different forms of energy and electricity, reference manuals; dissemination of specific project and technical reports, of expert group meetings and workshops, and the establishment of information databases and networks.

III. OBSERVATIONS AND CONCLUSIONS

27. Many entities within the United Nations system are active in a wide and diverse range of projects and programmes in the field of energy. The disparate activities, afford an opportunity to see at a glance the nature and type of actions being undertaken by an individual entity and by the United Nations system as a whole. A major limitation of the entries is that they do not all explicitly portray the magnitude or level of activity by each entity, thus making it difficult to undertake a comparison of the type of activities. The nature of activities are mainly dictated by the mandates of the legislative or governing bodies of the entities concerned. Many of the projects and programmes were devised to respond to the perceived needs of member States or, as has been the case over the years, to assist specific countries - mainly developing countries and more recently countries with economies in transition - to meet their objectives in the energy field through, for example, training, information flows, more efficient management or development and use of indigenous resources, rehabilitation of old equipment, and development of policies and strategies. The World Bank is the most active, with numerous lending and non-lending projects and programmes, current or planned.

28. Some activities have changed little over the years, responding as they have done to such issues as ensuring security of energy supplies, formulating and implementing tariff structures to generate the desired revenues, assessment of indigenous energy resources, development of energy policies, projection of current and future supply demand requirements under given assumptions, such as advances in technology and development options, and developing methodologies to help in this endeavour.

29. Other activities reflect the changing energy situation and emerging issues, for example, increased concern about the environmental impact of the development and use of energy resources and, more recently, the effect of greenhouse gas emissions from the increased use of fossil fuels. The ensuing activities involve a more accurate estimation of the nature of impacts and what needs to be done at the national and global levels. They have also involved examining conditions necessary and approaches aimed at the development and widespread application of environmentally sound technologies, in particular, renewable sources of energy, formulation and application of more energy efficient measures and such other measures aimed at mitigating the impact of global warming.

30. Institution and capacity-building, comprising education and training, generation of awareness, and strengthening of national, subregional and regional institutions, are among the activities that have been ongoing for a long period of time, although the specific activities have changed over the years in the light of the changing situation and problems to be addressed at the national, regional or global level. While there are a number of entries under education and training, this is one of the areas that needs particular attention by the organizations concerned, especially in relation to helping the developing countries strengthen or establish institutions capable of undertaking analysis, policy formulation and strategy implementation. This is particularly relevant given the fact that many developing countries are being called upon to participate actively in many conventions and become party thereto. It is important that the countries are better placed to fully assess the implications of their negotiating positions and that of being party to specific agreements.

31. Of critical importance, and an area requiring more effort by the United Nations system, is the issue of raising awareness, especially on the part of decision- and policy-makers, who need to have the right kind of information in order to build their capacity to engage in dialogue with a wide range of groups, including the scientific and technical community. Equally important is the generation of the awareness of the public at large: a better informed public will improve the quality of its participation in the identification of problems, preparation of plans and plan implementation.

32. A notable area of activity relates to the mobilization of financial resources for pre-investment, as well as actual investment stages. In this, the main actors are the World Bank, UNDP and the GEF.

33. Ensuring access to the right kind of information is an important prerequisite for the development of realistic policies and strategies in regard to energy resource development and use. A number of activities reported reflect this very important programme, although it is not clear as to what extent these activities could be expanded to meet the ever increasing demands. Of critical

importance is the coordinated development and proper management of databases on various aspects of energy, taking due account of the dynamic nature of such data systems, and the establishment and increased use of energy information networks.

34. Many entities have reported on the nature and extent of cooperation with their counterparts within the United Nations system. On the basis of the many listings, the trend is encouraging. However, it is not clear just how systematic this mode of cooperation is and whether it is adequate as a basis for future action, for avoiding unnecessary overlap in the implementation of activities in the field of energy, or for engendering maximum benefits, given the current situation characterized by tight resources programmes. Directly related to this is the issue of coordination of activities. Except for very few entries, the degree of coordination of activities seems to be minimal. Needless to say, this is an area in which a lot more could be done. The Committee may wish to suggest specific ways and means to improve coordination, e.g. through the Inter-agency Committee on Sustainable Development, which could devote part of its agenda to energy issues. It would thus provide a forum for the entities concerned to exchange experiences and views on the respective projects with the view to developing a common approach and programmes and thereby ensuring better coordination and cooperation from the very early stages of the conceptualization and formulation of projects and programmes.

35. The area of transportation, as an energy user and transporter - with attendant implications to the efficiency of energy use, environmental pollution, greenhouse gas emissions, and sustainable development - does not seem to be receiving the attention that it deserves by the entities within the United Nations system.

36. Some effort has been reported in regard to the integration of energy, environment and development. This is an exacting task, but one in which further effort is required, particularly at the national level. Associated with this is the need to pay more attention to energy demand and supply issues in relation to strategies for increased efficiency of energy and material use and for effectively addressing the issues related to protection of the atmosphere and climate change.

37. Given the importance attached to the development and application of environmentally sound technologies (and energy technologies in particular) one would like to see more activities in this area, including those concerned with the promotion of standardization of energy equipment; this is particularly relevant to the development and application of renewable energy technologies.

38. The current supply of energy to rural areas of developing countries where the bulk of the population live is inadequate; there is therefore an urgent need to expand substantially the supply of energy, including rural electrification, to stimulate economic growth or at least help arrest, reverse and eventually eradicate poverty, which is rampant in these areas. This is an area in which more effort is required as is, in general, that of the diversification of the energy supply system to ensure an optimum energy supply mix.

39. Much has been said about the need for increased involvement of women in a whole range of human activities, especially at the policy and decision-making

levels. Yet the reported activities are glaringly thin in this area. Needless to say, more attention should be paid to this critically important area - to ensure more participation at all levels, and to increase women's capacity to participate in decision-making, in the latter, for example, through training in the field of energy.

40. It is apparent that the activities, as reported, by the respective entities of the United Nations system, tend to concentrate on conventional energy systems with inadequate attention being given to sustainable energy developments which would increasingly involve the development and application of renewable sources of energy.

Notes

1/ Official Records of the Economic and Social Council, 1995, Supplement No. 5 (E/1995/25).

2/ A table giving detailed listing of the activities by individual entities with the United Nations systems is available as a background document.